

IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. – 58. (Canceled)

59. (Currently Amended) A method for detecting the pitch values of notes in a musical sound signal, comprising the steps of:

- (a) isolating notes identifying one or more voiced segments in the sound signal using an energy function of the sound signal;
- (b) dividing applying a gradient-based processing to said [[notes]] voiced segments for dividing each voiced segment into one or more groups of blocks notes; and
- (c) deriving pitch values of the respective notes in the sound signal said blocks; and
- (d) deriving the pitch values of said notes by means of clustering on said pitch values of said blocks.

60. (Currently Amended) A method according to claim 59, wherein the process of isolating dividing the voiced segments into notes uses note markers to do so.

61. (Currently Amended) A method according to claim [[59]] 60, wherein the process of deriving the pitch values of the respective notes comprises dividing portions of each voiced segment between the note markers into blocks in a group are of equal length.

62. (Currently Amended) A method according to claim [[59]] 61, wherein each [[group]] portion contains the same number of blocks.

63. (Currently Amended) A method according to claim 59, wherein the process of deriving the pitch values of the respective notes comprises applying k-mean clustering on the ~~bleek~~ pitch values derived for the blocks between the note markers.

64. (Currently Amended) A method according to claim 59, further comprising the step of (e) rounding the ~~detected~~ derived pitch values of the respective notes to the nearest note values.

65. (Currently Amended) A method according to claim 59, wherein the note-isolating step identifying of the voiced segments is performed based on a determination of silences in the musical sound signal.

66. (Canceled)

67. (Currently Amended) A method according to claim [[63]] 59, further comprising the step of extracting notes from said pitch values to create note descriptors.

68. (Currently Amended) A method according to claim 59, wherein the musical sound signal is digitised digitized.

69. (Currently Amended) A method according to claim 59, wherein the musical sound signal is an audio signal of a sound produced by a person.

70. (Previously Presented) A method according to claim 69, wherein the sound comprises one or more of the group of: humming, singing and whistling at least a portion of a piece of music.

71. (Previously Presented) Apparatus for use in use in detecting the pitch values of notes in a musical sound signal, operable according to the method of claim 59.

72. (Currently Amended) Apparatus for detecting the pitch values of notes in a musical sound signal, comprising:

means for identifying one or more voiced segments in the sound signal using an energy function of the sound signal;

means for applying a gradient-based processing to said voiced segments for dividing each voiced segment into one or more notes; and

means for deriving pitch values of the respective notes in the sound signal

(a) note isolating means for isolating notes in the sound signal;

(b) pitch-value-dividing means for dividing said notes into one or more groups of blocks;

(c) block-pitch-value deriving means for deriving pitch values of said blocks; and

(d) note pitch value deriving means for deriving the pitch values of said notes by means of clustering on said pitch values of said blocks.

73. (Currently Amended) Apparatus according to claim 72, wherein said note isolating means for applying a gradient-based processing uses note markers to isolate notes.

74. (Currently Amended) Apparatus according to claim [[72]] 73, wherein the means for deriving the pitch values of the respective notes divides portions of each voiced segment between the note markers into the blocks in a group are of equal length.

75. (Currently Amended) Apparatus according to claim [[72]] 74, wherein each [[group]] portion contains the same number of blocks.

76. (Currently Amended) Apparatus according to claim 72, wherein the note pitch value deriving means for deriving the pitch values of the respective notes is operable

to apply k-mean clustering on the block pitch values derived for the blocks between the note markers.

77. (Currently Amended) Apparatus according to claim 72, further comprising rounding means for rounding the detected derived pitch values of the respective notes to the nearest note values.

78. (Currently Amended) Apparatus according to claim 72, wherein the note isolating means for identifying the voiced segments operates based on a determination of silences in the musical sound signal.

79. (Canceled)

80. (Currently Amended) Apparatus according to claim [[76]] 72, further comprising note extracting means for extracting notes from said pitch values to create note descriptors.

81. (Previously Presented) Apparatus according to claim 72, operable to process a digital musical sound signal.

82. (Previously Presented) Apparatus according to claim 72, operable to process a musical sound signal being an audio signal of a sound produced by a person.

83. (Previously Presented) Apparatus according to claim 82, wherein the sound comprises one or more of the group of: humming, singing and whistling at least a portion of a piece of music.

84. – 86. (Canceled)